

Homework 11 – Volume

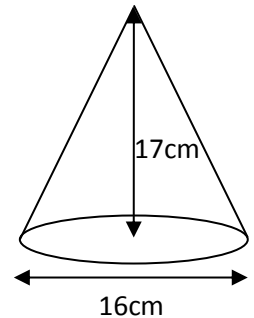
Formula given in exam:

$$\text{Volume of sphere} = \frac{4}{3}\pi r^3$$

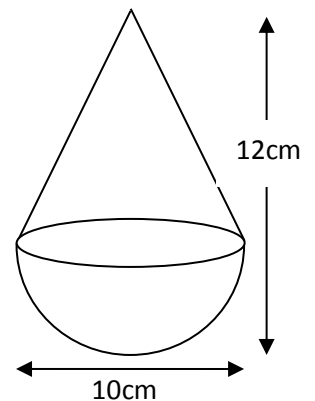
$$\text{Volume of cone} = \frac{1}{3}\pi r^2 h$$

$$\text{Volume of a pyramid} = \frac{1}{3}Ah$$

1. A cone has a base diameter of 16cm and a height of 17cm.
Calculate the volume of the cone, giving your answer correct to 3 sig figs.



2. A lead sinker is in the shape of a cone with a hemispherical base.
The total height of the sinker is 12cm and the diameter of the base is 10cm.
Calculate the volume of lead required to make the sinker.



3. Calculate the volume of
- the largest sphere which will fit inside a cube of side 15cm.
 - empty space between this sphere and the cube. [Answer to nearest cm^3]
4. A pyramid has a square base of side 6cm and a vertical height of 9cm.
Calculate the volume of the pyramid correct to 2 significant figures.
5. A young child was given a slab of moulding clay. It was a cuboid and measured 15.2cm by 4.8cm by 3.4cm.
- Calculate the volume of the cuboid rounding your answer to 2 significant figures.
The clay was made into 25 identical spheres.
 - Using your answer from part a., calculate the radius of one of the spheres.